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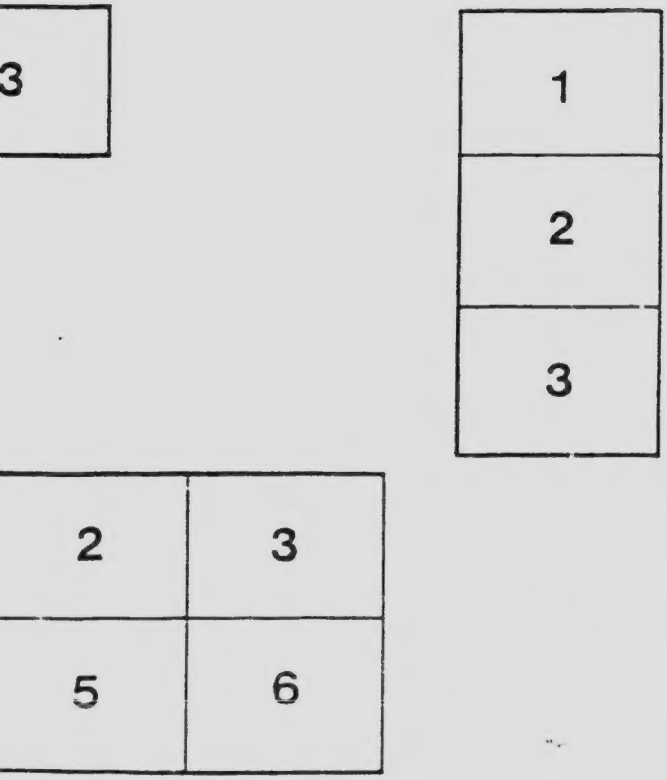

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DEPARTMENT OF AGRICULTURE
(HORTICULTURAL BRANCH).

THE ONION-THRIPS

(*Thrips tabaci* Lind.)

THE onion-thrips is an annual source of loss, particularly to growers of onions in the drier and more arid sections of the Province. This loss is for the most part needless, inasmuch as effective sprays can be applied by which the attack by the thrips may be reduced below the margin of serious import.

The onion-thrips (*Thrips tabaci*): Adult. Highly magnified. (U.S. Dept. Agric. Bull. 856. Orton and Chittenden.)

The only question that need arise in the minds of the growers is, "Does it pay to spray?" V. I. Safro, writing in the *Journal of Economic Entomology*,* propounds the rule that "the cost of spraying truck crops for pests that threaten to destroy all or a large part of the crop does not become prohibitive until the immediate application in view, together with such following farm operations as can be definitely foreseen, have a total cost in excess of the reasonable expectation of gross returns from the crop in question." He further remarks that "when from $150 to $175 per acre has been expended in growing onions and a severe epidemic of onion-thrips threatens, it is certainly good business to spend even as much as $50 per acre, if necessary, in spraying to save even as little as $100 of the original investment." To these statements may be added the remark that efficient control in one year undoubtedly reacts upon the degree of

Onions attacked by thrips. Note the variation in size and the characteristic appearance of the leaves. (Author's illustration.)

infestation in the next year. The advisability of controlling the onion-thrips, therefore, is a matter which can only be settled by the individual grower himself or by a community of growers.

The onion-thrips passes through four distinct stages in its development—the egg, larva, pupa or nymph, and adult. The winter is passed

* Safro, J. E. E., Vol. 10, No. 6, 1917.

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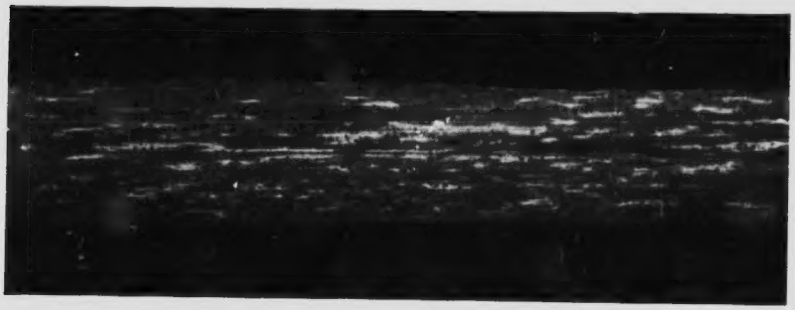
in the soil in the larval stage for the most part, development to the adult taking place in early spring. Eggs are laid in slits on the leaves of the plant and the young larvæ issue to commence feeding on the leaf-tissue. The illustration given below shows the characteristic work of another species of thrips upon oat-leaves. The damage to onion-leaves is similar, and results in a sapping of the vitality of the plant by a process of sucking, causing a "silvery" appearance and a diminution in the growth of the onion. The life-history of an individual thrips, from the egg to the adult, is rapid; hence several generations may be produced in a season. Warm, dry weather fosters their development, but rain and cold weather undoubtedly checks them.



Work of thrips on leaves of oats, enlarged.

Control.

Water Spray.—In a small way, frequent and well-directed sprays of ordinary water will go far in reducing injury.

Soap Spray.—Any spray containing either whale-oil soap, soft soap, or any of the non-caustic neutral soaps may be used. If applied without adding nicotine-sulphate or any other insecticide, these soaps, each individually, may be used at the ratio of 1 lb. to 8 imperial gallons of water. The soap is first dissolved in a small quantity of warm water and then added to the full amount.

Nicotine-Sulphate-Soap Spray.—If standard 40 per cent. nicotine sulphate is used, soap may be added in lessened quantity to that required for a straight soap spray, and is included to serve as a "spreader."

The following formula is recommended to obtain the most satisfactory results in commercial plantations: 40 per cent. nicotine sulphate, $\frac{1}{2}$ to $\frac{3}{4}$ pint; whale-oil soap, 4 to 5 lb.; water, 80 (imperial) gallons. Mix in barrels of 40 gallons each.

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Tobacco Decoctions.—These may be made by steeping waste tobacco leaves and stems in cold water for a few days; 1 lb. of tobacco waste to 2 gallons of water.

The time of year at which these sprays are applied depends upon the powers of observance of the grower. A close watch should be kept for the presence of the small, active, greenish-yellow larvæ which may be found in the axils of the leaves close to the bulb. Spray should be applied as soon as they are readily apparent and as often as deemed necessary. The first spray should be applied about June, and particular care should be taken to direct it, under considerable pressure, into the axils of the leaves. On the degree of efficiency at which this first spray is applied will depend the necessary number of later applications.

Commercial growers of onions should provide themselves with suitable spraying-machines which will permit of the work being done rapidly and economically.

Victoria, B.C., issued September, 1919.

This circular has been prepared by R. C. Treherne, Field Officer for British Columbia, Entomological Branch, Dominion Department of Agriculture, Vernon, B.C., at the request of the Horticultural Branch.

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